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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/819,163	03/27/2001	Shlomo Ovadia	42390P11289	3899

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EXAMINER

HOYE, MICHAEL W

ART UNIT	PAPER NUMBER
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2623

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.		Applicant(s)	
	09/819,163		OVADIA, SHLOMO	
	Examiner		Art Unit	
	Michael W. Hoyer		2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,7,8,11,12,14,15,17-20,22 and 24-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,7,8,11,12,14,15,17-20,22 and 24-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on January 23, 2007 have been fully considered but they are not persuasive.

Regarding amended independent claim 1, as well as amended independent claims 11 and 19, the Applicant argues that, "Roeck does not disclose or suggest temporarily activating adaptive equalizer logic in a QAM modulator to demodulate the selected channel according to a quadrature phase shift keying (QPSK) modulation technique to position a slicer in the QAM demodulator to an appropriate quadrant in an in-phase/quadrature (I/Q) constellation".

More specifically, the Applicant argues on page 8 that:

Although Roeck discloses at step 412 of Figure 4 a "cable modem's receiver chip or demodulator is configured to check for a QPSK modulated signal," there is no disclosure or suggestion of activating adaptive equalizer logic in a QAM modulator to demodulate a selected channel according to QPSK modulation techniques to position a slicer in the QAM demodulator to an appropriate quadrant in an I/Q constellation. According to column 10, ll. 7-65 of Roeck, this step involves only a **check** for a QPSK modulated signal. There is no disclosure or suggestion of actually demodulating by a QAM modulator.

In response, the Examiner respectfully notes that there are several issues associated with the current claim language, as well as the specification, which need to be addressed and corrected. To begin with, independent claims 1, 11 and 19 currently recite, "...adaptive equalizer logic in a QAM **modulator**...", and then recite "the QAM demodulator" which is a 35 U.S.C. § 112, second paragraph, lack of antecedent basis issue. It appears that the claimed "QAM modulator" should be a --**QAM demodulator**--. In addition, the Specification appears to

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refer to the claimed “QAM modulator” as described above as “QAM demodulator 310” on the top of page 15. However, the Specification also briefly describes a “QAM modulator” on line 14 of page 10. Either way there are still 35 U.S.C. § 112, second paragraph, issues associated with the claims. Furthermore, there may be 35 U.S.C. § 112, first paragraph, enablement requirement issues because if the claims are referring to “a QAM modulator to demodulate the selected channel...”, the claims contain subject matter which was not described in the Specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention because a “receiver” receives modulated signal(s) and then demodulates the signal(s), if the receiver or cable modem is both receiving signal(s) and transmitting signal(s) this would require some sort of transceiver device. Also, the Specification needs to be carefully checked and corrected. For example, “Channel Detection Agent 214”, as shown in Figure 3, is referred to in the Specification as both elements “214” and “314”.

Regarding the Applicant’s arguments directed to the Roeck reference as stated above, the Applicant’s Specification states on page 7, lines 16-20, that, “Transmit module 204 is intended to represent any of a wide variety of cable modem transmit devices known in the art. In accordance with one example implementation, transmit module 204 includes a QPSK/QAM-16 modulator...” Therefore, as admitted by the Applicant, transmit module 204 represents any of a wide variety of cable modem transmit devices, including the use of a QAM modulator, which is known in the art. In addition, Roeck discloses that the processor/receiver chip or demodulator in a cable modem is programmed to detect and demodulate various modulation schemes including various QAM and QPSK modulation types (see col. 8, line 50-col. 9, line 20, also see col. 9, line

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42-col. 11, line 51). Roeck also discloses in the sections cited above that the demodulator in the receiver chip contains a slicer, which further meets the claim limitation as presented above.

Specification

2. The disclosure is objected to because of the following informalities: “Channel Detection Agent 214”, as shown in Figure 3, is referred to in the Specification as both elements “214” and “314”, number “314” when referring to “Channel Detection Agent 214” should be corrected to read --**214**--. The Specification should be carefully reviewed for any additional corrections.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 11 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation “the QAM demodulator” in the “temporarily activating...” limitation of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 recites the limitation “the QAM demodulator” in the “temporarily activating...” limitation of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 19 recites the limitation “the QAM demodulator” in the “temporarily activates...” limitation of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2, 4, 7-8, 11-12, 14-15, 17-20, 22 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roeck et al (USPN 6,574,796), in view of Vogel et al (USPN 6,804,262).

As to claim 1, Roeck discloses a data carrier detection system utilized in cable networks. Roeck discloses performing a search for data channels in several multimedia channels in a cable network by searching for a viable data carrier in a downstream channel through the use of a cable modem (see the Abstract, as well as col. 5, lines 40-63 and col. 6, lines 42-62). Regarding the claimed, “eliminating one or more channels associated with at least one of analog media content and non-digital signal sources from a search for data channels, the one or more channels part of a plurality of multimedia channels in a cable network”, note the sections of Roeck cited above, in addition to, Roeck teaches keeping a list or lookup table of recently used frequency channels and trying each one of the frequency channels from the list, and Roeck also discloses eliminating all channels that were definitely not eligible candidates for being a data carrier by a comparison of signal to noise ratios (see col. 9, lines 51-60, also see col. 11, lines 19-22). Roeck does not explicitly disclose the claimed, “eliminating one or more channels associated with analog media content and non-digital signal sources”. However, the Vogel et al reference specifically teaches

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eliminating from the search channels analog television channels by having the cable modem take power measurements in order to pinpoint the channels that are likely to carry useable digital data (see col. 16, lines 48-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to have combined the teachings of Roeck for performing a search for data channels in multimedia channels in a cable network with the additional teachings of Vogel et al which eliminates from the search channels analog television channels for the advantage of significantly reducing the time and processing required to perform a search for data channels in a cable network. One of ordinary skill in the art would have been led to make such a modification since both the Roeck and Vogel references are both directed toward performing a search for data channels in the downstream band of a cable network and the Vogel reference provides additional efficiency by reducing the search time as described above.

Roeck discloses the claimed, "tuning a receiver of a broadband cable signal associated with a quadrature amplitude modulation (QAM) technique to a selected channel within the broadband cable signal", as met by col. 6, lines 42-62; col. 8, line 59 - col. 9, line 20 and col. 12, lines 47-50. Roeck discloses the claimed, "temporarily activating adaptive equalizer logic in a QAM modulator[/demodulator?] to demodulate the channel according to a quadrature phase shift keying (QPSK) modulation technique to position a slicer in the QAM demodulator to an appropriate quadrant in an in-phase/quadrature I/Q constellation; sweeping a carrier frequency of the receiver over a carrier loop bandwidth for the receiver to attempt to obtain a channel lock on the selected channel which the receiver is activated in order to demodulated the selected channel according to the QPSK modulation technique; if a channel lock is obtained and the selected channel is a data channel, activating the adaptive equalizer logic in the QAM

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modulator[/demodulator?] to demodulate the selected channel according to the QPSK technique”, as met by the Abstract; col. 5, lines 40-63; col. 6, lines 42-62; col. 7, lines 25-41; col. 8, line 59-col. 9, line 20; and col. 9, line 42 - col. 11, line 51. More specifically, the Applicant’s Specification states on page 7, lines 16-20, that, “Transmit module 204 is intended to represent any of a wide variety of cable modem transmit devices known in the art. In accordance with one example implementation, transmit module 204 includes a QPSK/QAM-16 modulator...”

Therefore, as admitted by the Applicant, transmit module 204 represents any of a wide variety of cable modem transmit devices, including the use of a QAM modulator, which is known in the art. In addition, Roeck discloses that the processor/receiver chip or demodulator in a cable modem is programmed to detect and demodulate various modulation schemes including various QAM and QPSK modulation types (see col. 8, line 50-col. 9, line 20, also see col. 9, line 42-col. 11, line 51). Roeck also discloses in the sections cited above that the demodulator in the receiver chip contains a slicer, which further meets the claim limitation as presented above. Furthermore, the Examiner interprets “adaptive equalizer” to denote a device which could accomplish any of a number of functions. For example, it may be used to reduce distortion over transmission paths, improve frequency response, or ensure signals have fixed amplitudes or energy levels. Taking this into account, Roeck’s system comprises an internal amplifier that ensures the incoming signal has a fixed amplitude and/or energy level (col. 9, line 42-col. 10, line 20). This facilitates the system’s primary function of detecting data carriers via a modulation scheme (QPSK, QAM) analysis.

Claims 11, 18 and 19 correspond to the method claim 1. Thus, each is analyzed and rejected as previously discussed.

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As to claim 2, Roeck's data channel is a "narrow band" channel within the broadband cable signal. Accordingly, Roeck et al in combination with Vogel et al teach each and every limitation of claim 2.

As to claim 4, Roeck further teaches accessing a list of channels within the system (inherent that list is stored), selecting a channel (i.e., frequency) from the list, and *demodulating the channel to recover system information* (as discussed under the rejection of Claim 1, see col. 4, lines 52-66 & col. 9, lines 42-63). Accordingly, Roeck et al in combination with Vogel et al teach each and every limitation of claim 4.

Claims 12 and 20 correspond to the method claim 4. (**note:** italicized portion above needed to reject claims 12 and 20). Therefore, each is analyzed and rejected as previously discussed.

As to claim 7, Roeck further teaches the system will continue scanning channels until the data channel (which contains updating characteristics, etc.) is located (col. 10, line 66-col. 11, line 22). Accordingly, Roeck et al in combination with Vogel et al teach each and every limitation of claim 7.

Claims 14 and 22 correspond to the method claim 7. Thus, each is analyzed and rejected as previously discussed.

As to claim 8, Roeck further discloses the system can first scan the most recently used channel, which inherently was a data channel (col. 9, lines 42-64). Since the system can contain a list in which each channel contained in said list is scanned in turn, it is inherent the most recently used data channel would be first in the list. If not, the system would not scan the most

recently used channel first. Accordingly, Roeck et al in combination with Vogel et al teach each and every limitation of claim 8.

Claim 15 corresponds to the method claim 8. Thus, it is analyzed and rejected as previously discussed.

As to Claim 17, it is inherent the system of Roeck restore the demodulating parameters once the data channel has been ascertained because the broadband signal and data channels are modulated using different techniques. Moreover, Roeck also teaches the system processor detects the data carrier by examining the demodulation error of the received symbols (i.e., info extracted from the demodulated data) (see col. 8, line 59-col. 9, line 20). Accordingly, Roeck et al in combination with Vogel et al teach each and every limitation of claim 17.

Claims 24 and 25 correspond to Claim 17. Thus, each is analyzed and rejected as previously discussed.

As to Claim 26, both the Roeck et al and Vogel et al references disclose the use of DOCSIS (see the references cited in Roeck et al and col. 2, lines 12-20 of Vogel et al), which inherently comprises PIDs in a DOCSIS protocol header. Accordingly, Roeck et al in combination with Vogel et al teach each and every limitation of claim 26.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael W. Hoye whose telephone number is **571-272-7346**. The examiner can normally be reached on Monday to Friday from 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller, can be reached at **571-272-7353**.

Any response to this action should be mailed to:

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Michael W. Hoyer
April 10, 2007



**JOHN MILLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600**